REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 6-8, 14-16 and 19-23 are pending in the present application. Claims 21-23 are newly added by the present amendment. Support for the new and amended claims can be found in the original specification, claims and drawings.[1] No new matter is presented.

In the Office Action, Claims 8 and 16 are rejected under 35 U.S.C. § 103(a) as unpatentable over Takahashi (U.S. Pat. 6,044,341) in view of Izumi (U.S. Pub. 2002/0097668); Claims 6, 7, 14 and 15 are allowed; and Claims 19 and 20 are objected to as dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Applicant appreciatively acknowledges the indication of allowable subject matter. However, as Applicant submits that independent Claims 8 and 16 patentably define over the applied references, Claims 19 and 20 are presently maintained in dependent form.

The Office Action rejects Claims 8 and 16 under 35 U.S.C. § 103(a) as unpatentable over Takahashi in view of Izumi.

Independent Claim 8 recites a transmitting device that processes radio transmitted signals, comprising:

> a frequency conversion means for converting an original time sequence signal of a known multi-valued pattern into a frequency signal to attain a spectrum characteristic;
>
> a spectrum characteristic processing means for changing an amplitude of the frequency signal while retaining phase information of the frequency signal;
>
> means for reconverting the frequency signal having the spectrum characteristic processing applied into a time sequence signal; and
>
> a pre-amble pattern storage means for storing ***the signal reconverted into the time sequence signal as a pre-amble signal for attaining***

[1] New Claims 21-23 recite features similar to those recited in Claims 6, 8 and 19, but omit "means for" language, thereby not invoking interpretation under 35 U.S.C. § 112, sixth paragraph.

> ***synchronization at a receiver***, wherein the pre-amble signal read from the pre-amble pattern storage means is transmitted together with a transmitted data body.

Independent Claim 16, while directed to alternative embodiments, recite similar features.

In rejecting the claimed features directed to the frequency conversion means, spectrum characteristic processing means, and means for reconverting, the Office Action relies on the Fourier transform unit 33, amplitude spectrum subtractor 34 and inverse Fourier transform unit 40 shown in Fig. 4 of Takahashi. The Office Action then broadly cites Fig. 3 of Takahashi as including a "pre-able storage means for storing a signal reconverted into the time sequence signal."

As shown in Fig. 3 and described at col. 7, ll. 1-37 of Takahashi, a computer used to play back voice data recorded on a recording medium includes a recording medium 22 for recording voice data, and a recording medium 23 for recording a noise suppression program. The CPU of the computer 21a connects to internal memory 21d, which becomes a working area at the time of performing processing control, and a hard disk drive 21c for saving the noise suppression program and voice data read by the recording media drive 21b. Regenerative processing is performed on the voice data by a voice regenerative processing program saved in the built-in hard disk drive 21c, and the noise suppression program is read from the built-in hard disk drive 21c, and is executed after being developed in the internal memory. The computer then outputs the noise suppressed voice signal to a speaker 26 for playing a voice signal processed by the voice regenerative processing program.

Therefore, each of the recording mediums and disk drives described in reference to Fig. 3 of Takahashi are either used to provide the input signal shown in the noise suppressor 5 of Fig. 4, or are used to assist the CPU 21a in performing the noise suppression processing. Takahashi, however, fails to disclose that there is any "storage means" provided where the

signal is output from the noise suppressor 5. In other words, a voice signal that has been processed by the Fourier transform unit 33, amplitude spectrum subtractor 34 and inverse Fourier transform unit 40 of Takahashi is output to a speaker 26 and is not stored in a storage means.

Therefore, Takahashi fails to disclose a "pre-able storage means for storing a signal ***reconverted into the time sequence signal***", as asserted in the outstanding Office Action.

The Office Action further concedes that Takahashi fails to disclose "convert a known multi-valued pattern into a frequency domain", but asserts that it would have been obvious "to convert a known multi-valued pattern since the known multi-valued pattern is just another signal ... The motivation or suggestion to do so is to suppress the noise."

As noted above, however, Takahashi is directed to a process of removing noise from a voice signal that is to be output to a speaker. In this case, noise suppression is desirable since the content of the received input signal is not known. If the voice signal in Takahashi were to be a known pattern (e.g. known voice signal), the noise suppression process shown in Fig. 4 would likely need not be performed.

The claimed configuration is directed to processing a pre-able sequence (known multi-valued pattern) in a specified manner in order to increase correlation characteristics at a receiving device. The claimed configuration, therefore, is not intended to remove noise from the signal including the known pattern, but instead alters the signal including the known pattern so that the signal can be transmitted ***as a pre-amble signal for attaining synchronization at a receiver*** together with a transmitted data body.

Therefore, as Takahashi is merely concerned with a process of removing noise from a voice signal, it would not have been obvious to one or ordinary skill in the art to "to convert a known multi-valued pattern ... to ... suppress the noise." In other words, Takahashi fails to teach or suggest why noise would be suppressed in a signal including a known pattern in his

system, much less that any noise-suppressed signal output from his system can be transmitted ***as a pre-amble signal for attaining synchronization at a receiver*** together with a transmitted data body, as claimed.

At p. 3, the Office Action further concedes that Takahashi fails to disclose "transmits a signal reconverted into the time sequence signal together with a data body as a pre-able signal for attaining synchronization on a receiving side." In at attempt to remedy these deficiencies, the Office Action relies on paragraphs [0013] and [0019] of Izumi, which describes a process of comparing a predetermined portion of a received subband signal to a known reference signal for gaining attenuation information of a transmitted symbol.

As an initial matter, Izumi merely describes a process of comparing a received pre-amble signal to a reference pre-able signal, and fails to disclose that the received signal has been ***reconverted into the time sequence signal***, as recited in independent Claims 8, 16 and 22.

Moreover, as discussed above, Takahashi is directed to a process of suppressing noise in a voice signal to be output to a speaker, while Izumi is directed to a process of receiving and transmitting OFDM signals. Therefore, it would not have been obvious for one of ordinary skill in the art to modify the voice signal noise suppression configuration of Takahashi, to incorporate the process of exchanging preamble signals between wireless devices as described by Izumi, since the output of the noise suppression in Takahashi is applied to a speaker, and not transmitted wirelessly to another device.

Therefore, for at least the reasons discussed above, Takahashi and Izumi fail to teach or suggest various features recited in independent Claims 8 and 16, and it would not have been obvious to one of ordinary skill in the art at the time of the invention to modify Takahashi and Izumi, as asserted in the Office Action, to reject Claims 8 and 16.

Accordingly, Applicant respectfully requests that the rejection of Claims 8 and 16 under 35 U.S.C. § 103 be withdrawn.

Further, new Claims 21-23 are added by the present amendment. New Claims 21-23 recite features similar to those recited in Claims 6, 8 and 19, but omit "means for" language, thereby not invoking interpretation under 35 U.S.C. § 112, sixth paragraph. Accordingly, Applicant respectfully submits that new Claims 21 and 23 are allowable, and also submit that Claim 22 patentably define over the applied references for substantially the same reasons as outlined above with respect to independent Claims 8 and 16.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 6-8, 14-16 and 19-23 is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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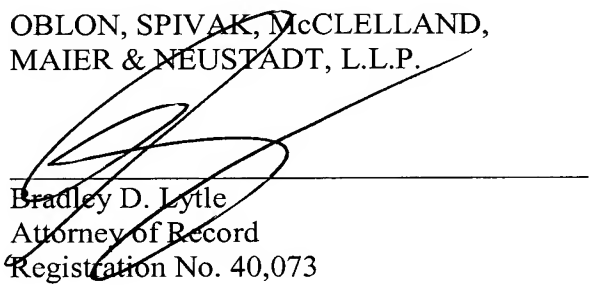

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